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IT Audit of IT Service Provider Using COBIT 4.1 Framework: Case Study at PT. XYZ

Muhammad Malik Hakim

Informatics Department, Universitas Muria Kudus

Abstract

IT service providers often campaign for the importance of having a high level of IT maturity to its customers. However, not all IT companies have a high commitment to IT management within their own organisation. As a case study, this paper attempts to measure the IT maturity level of PT. XYZ that now is a growing IT services provider. Data collection is done by interview, document study, and direct field observation. The measurement of IT maturity level is conducted using 4 domains of COBIT 4.1 Framework, consists of Plan and Organize (PO), Deliver and Support (DS), Acquire and Implement (AI), and Monitor and Evaluate (ME). The result shows a value of 2.5 which indicates that IT maturity level is at level 2 (Repeatable but Intuitive) which means low enough for companies that should have a high awareness of IT governance and commitment. This study shows that the level of IT maturity in IT service provider is not always as high as its campaign.

Keywords: *IT audit; COBIT 4.1; IT maturity; IT governance; IT service provider*

Abstrak

Penyedia layanan TI sering mengkampanyekan pentingnya sebuah perusahaan memiliki tingkat kematangan TI yang tinggi kepada pelanggannya. Namun, ternyata tidak semua perusahaan TI memiliki komitmen yang tinggi terhadap manajemen TI dalam organisasi mereka sendiri. Sebagai sebuah studi kasus, paper ini mencoba mengukur tingkat kematangan TI di PT. XYZ yang saat ini merupakan salah satu perusahaan nasional penyedia layanan TI yang sedang berkembang. Pengumpulan data dilakukan dengan wawancara, studi dokumen, dan observasi lapangan secara langsung. Pengukuran tingkat kematangan TI dilakukan menggunakan 4 domain dalam COBIT 4.1, yang terdiri dari Plan and Organize (PO), Deliver and Support (DS), Acquire and Implement (AI), dan Monitor and Evaluate (ME). Hasil pengukuran menghasilkan nilai 2,5 yang menunjukkan bahwa tingkat kematangan TI berada pada level 2 (Repeatable but Intuitive) yang berarti cukup rendah bagi perusahaan yang seharusnya memiliki kesadaran tinggi terhadap tata kelola dan komitmen TI. Studi ini menunjukkan bahwa tingkat kematangan TI pada perusahaan penyedia layanan TI tidak selalu setinggi kampanyenya.

Keywords: *IT audit; COBIT 4.1; IT maturity; IT governance; IT service provider*

1. INTRODUCTION

In this globalization era, every organization faces increasingly intense competition. They implement many new ways to improve their competitiveness in their focused industries. The implementation and development of Information Technology (IT) field in the company's business processes become one solution that would be able to increase their competence in answering the demands and challenges of competition.

To bring IT into the organization, the company is investing both IT systems and policies expected to maximize the use of IT to deliver more value to the business. Investments issued by companies are often large, so that the organization expects a large change of conditions, of course, towards a better organizational structure. However, not all organizations get the best results from their IT investments because of the limitation of resources, unsuccessful investments, and so on. Many of which are perceived as not bringing about optimal change. Failure to achieve maximum returns from investments is often due to a lack of control in IT management.

Good control of IT management becomes important for the company to get the fit between business requirements and IT implementation. Control of IT is necessary in guarding IT investments, where often absorb enormous funds, but the results are very disappointing. IT management controlling was able to control IT project management also. It related to the

process and results of IT investments. Only few IT projects failed due to failure in managing projects. Well management control of IT projects can also help companies have better knowledge and results from IT system and infrastructure.

PT. XYZ, as one of growing national company, has faced lacking of knowledge and its result. As a result, there are at least three impacts of the lack of corporate IT management control, including the implementation of a new system that does not deliver expected results, reliance on high external consultants, and difficulties in measuring the value of IT investments.

This study will measure the level of maturity of IT governance at PT. XYZ using the COBIT 4.1 framework that contains best practices from IT governance management. In addition, COBIT 4.1 has been widely used to measure the level of maturity of IT governance, from the most complex level of using the entire domain in measuring IT governance management, specific units or divisions, implementing specific IT systems, to simpler ones; on a particular business process or unit using a portion of the COBIT 4.1 domain.

COBIT 4.1 in wide scope is applied by Putra et. al. [1] that measures the performance of IT governance in the airport company, while Monica et. al. [2] conducted study to iron and steel construction companies. The two studies conducted an audit of overall IT governance management in a company using four domains in COBIT 4.1. The use of four domains in smaller scales is done by Suradi and Wiyanta [3] and Arumana et.al [4] in the academic environment; Hanief at the Sharia Bank Branch Office [5]; as well as Shodiq and Ghozali in government offices (Office of Local Government) [6].

In smaller scopes, COBIT 4.1 can be applied to certain system implementation or perform measurement with specific domains according to the concern of the object to be measured. Some example namely; implementations on IT security services by Putra et.al. [7]; and Rizki et. al. on the implementation of Business Intelligence [8]; While for the use of some of the COBIT 4.1 domain, among others done by Tjhin [9] and Alit et.al. [10] who focus solely on Domain AI, and Octavia who focuses on the domain of PO and ME [11].

2. MATERIALS AND METHODS

2.1. COBIT 4.1

COBIT (Control Objectives for Information and Related Technology) provides the best possible measure, indicators, processes and set of best practices to help organizations get the most out of IT management and develop controls for appropriate IT management for an organization. COBIT Framework is a framework that produces IT management controls with a focus on the role of IT in supporting organizational business processes. The COBIT Framework uses information, which supports business needs, and a combination of IT resources for IT control.

COBIT is a collection of best practices covering almost all IT processes in general. Therefore, COBIT usage will be more effective when accommodated according to company conditions and specific to the IT management that would be controlled [12]. Inside COBIT 4.1 there are 34 IT processes that fall into four domains: Planning & Organization (PO), Acquisition & Implementation (AI), Delivery & Support (DS), and Monitoring & Evaluation (ME) [13].

2.2. Research Method

The measurement process consists of two main stages, namely data collection and analysis. At the stage of the data collection process, the primary data obtained from the interview and observation; while secondary data is obtained from field study and literature study. In field studies and literature, review of the data sources in the form of related documents and other literature and references is required as a comparison to support the analysis phase. The analysis phase performed in several sequences of steps that illustrated in Figure 1. In the figure, Maturity Measurement would be the result of this study. Then, the detail of staging analysis as shown in Figure 1 described as follows.

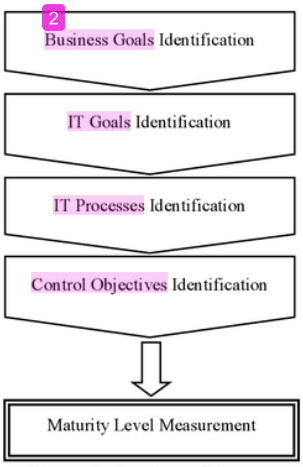

Figure 1. Staging of Analysis

a. Bussiness Goals Identification

Business goals that becomes priority in PT XYZ nowadays are: improve cost efficiency & transparency, on time delivery, right specs, effective services, purchasing effectivity, increase assets utilization, develop long term supplier relationship, centralization of purchasing, improve performance culture, and increase employee competency & motivation. As determined in COBIT 4.1 Framework, those goals then mapped and grouped into 4

perpectives of Balance Scorecard Model as shown in Figure 2.

Figure 2. XYZ's Business Goals in Balance Scorecard Perspectives

After mapping business goals in balance scorecard, the next step is linking to generic business goals of COBIT 4.1. COBIT maps the common business goals with four BSC perspectives, showing COBIT coverage to alignment between business as value and IT as an enabler. The results of the linking can be seen in Table 1 that covered 4 BSC perspectives; financial, customer, internal, and learn and growth perspective.

Table 1. Linking XYZ's Business Goals to COBIT 4.1

Perspective	Business Goals	COBIT 4.1
Financial Perspective		
F1	Improve cost efficiency and transparency	Improve corporate governance and transparency
Customer Perspective		
C1	On time delivery	Improve customer orientation and services
C2	Right specs	
C3	Effective services	Establish service continuity and availability
Internal Process		
IP1	Purchasing effectively	Improve and maintain business process functionality
IP2	Centralization of purchasing	
IP3	Develop long term supplier relationship	Lower process costs
IP4	Increase assets utilization	
Learning and Growth		
LG1	Improve performance culture	Acquire and maintain skilled and motivated people
LG2	Alignment organization for centralized purchasing	
LG3	Increase employee competency	
LG4	Improve employee motivation	

b. IT Goals Identification

The next step is identifying IT Goals, using COBIT 4.1 Business Goals to IT Objectives and then interpret it to the analysis. COBIT has given every business goals mapping with supporting IT goals. This mapping shows what IT goals contributing to the achievement of certain business goal. Here will be a strong alignment between business and IT. Table 2 show the associated of IT goals from certain COBIT business goals.

Table 2. Associated COBIT Business Goals to IT Goals

Perspective	Business Goals	IT Goals
Financial Perspective		
F1	Improve cost efficiency and transparency	2 , 18
Customer Perspective		
C1	On time delivery	3 , 10 , 16 , 22 , 23
C2	Right specs	
C3	Effective services	
Internal Process		
IP1	Purchasing effectively	6 , 7 , 8 , 11 , 13 , 15, 16 , 24
IP2	Centralization of purchasing	
IP3	Develop long term supplier relationship	
IP4	Increase assets utilization	
Learning and Growth		
LG1	Improve performance culture	9
LG2	Alignment organization for centralized purchasing	
LG3	Increase employee competency	
LG4	Improve employee motivation	

c. IT Process Identification

IT Process identification is done to determine the IT processes involved in realizing IT goals. After careful interpretation, the IT processes involved are PO1, PO3, PO4, PO10, AI2, AI3, AI5, DS4, DS6, DS13, ME1, and ME4

d. Control Objectives Identification

Each IT Process has a control objective that is different from one another. At this stage, a study has conducted to compare the implementation of control objective within the company with the best practice in COBIT 4.1.

3. RESULT AND DISCUSSION

The results of the analysis and comparison of IT processes assessed to determine the maturity level tailored to the Maturity Model in COBIT 4.1. How well these developments should depend primarily on IT objectives and basic business needs supported. The scale in the maturity model will help IT management see the existing management flaws and set target improvements where needed. A good maturity model influenced by the company's business results, operational environment and industry practices. In detail, the level of maturity of management will depend on the company's dependence on IT, its technological perfection and, most importantly, the value of information.

Table 3. PO Domain Scores

PO	Plan and Organise	
PO1	Define a Strategic IT Plan	1,6
PO3	Determine Technological Direction	1,4
PO4	Define The IT Processes, Organization, and Relationship	2,5
PO10	Manage Project	3,1
	PO Average Score	**8,6 / 4 = 2,15**

The maturity level of PO Domain is 2 (Repeatable but Intuitive). At this domain in PT. XYZ, there is no conformity among IT processes and business strategy of the company, so that it

implemented without a good understanding. The company's strategic plan has known and implemented only to fulfill a SOP (Standard Operating Procedure). This is due to the company's business strategy is made only by certain people, so the understanding and sense of ownership of IT goals among employees is different each other.

Furthermore, the implementation of IT projects relies heavily on certain employee skills due to the absence of good training management to all employees. If there some trainings, because of an urgent need and not based on a sustainable training plan. Nevertheless, the implementation of the IT project is running well and in accordance with the original plan, as well as well documented.

Table 4. AI Domain Scores

AI	Acquire and Implement	
AI2	Acquire and Maintain Application Software	3,2
AI3	Acquire and Maintain Technology Infrastructure	4,7
AI5	Procure IT Resources	2,3
	AI Average Score	**0,2 / 3 = 3,4**

As shown in Tabel 4, the maturity level of AI Domain is 3 (Defined Process). From an AI domain perspective on PT XYZ, generally almost all employees and management understand the importance of new projects that will provide solutions to the problems at hand. Adoption and maintenance of IT investments done well, and documentation on IT project investments well implemented in accordance with the respective employee job desk.

In terms of IT procurement, the documentation and implementation of software and hardware is complete and well in condition. In terms of operational use of software, they rely heavily on the expertise of employees who served as administrators and support, and in addition did not do a scheduled training that followed by other users of the software. Additionally, in the software implementation, the company is still relying on employees who have expertise operate the software, also depends on the vendor that implements the software.

Table 5. DS Domain Scores

DS	Deliver and Support	
DS4	Ensure Continuous Service	2,1
DS6	Identify and Allocation Cost	2,3
DS13	Manage Operations	2,2
	DS Average Score	**6,6 / 3 = 2,2**

DS Domain have the maturity level of 2 (Repeatable but Intuitive). DS 4 is more focused on services generated from IT is expected to have good sustainability, therefore it is very important to do the company's efforts to disseminate the expertise and scheduling maintenance of IT investments that have been done.

PT. XYZ has successfully invested and implemented IT projects successfully, as well as maintenance and operational SOP documentation. However, the documentation is not well implemented, as some scheduled maintenance is not properly adhered to, with the reason that no significant problems are encountered or are happening with the company's operational support products and software. The company more reactive than responsive, for example, an intensive operational skills training conducted seriously when an employee gets out, and a maintenance and service performed when known that the IT system or infrastructure is experiencing problems and disrupts the company's operations. While in terms of allocating costs for IT needs, the company will allocate costs based on urgent needs, not on serious planning.

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Table 6. ME Domain Scores

ME	Monitoring and Evaluation	
ME1	Monitor and Evaluate IT Performance	1,6
ME4	Provide IT Governance	3
	ME Average Score	**4,6 / 2 = 2,3**

ME Domain maturity level is 2 (Repeatable but Intuitive). IT Processes in this domain are strongly associated with the DS domain, where the company do not have monitoring and evaluation management of IT performance either software or hardware. The absence of well oversight procedures, and continuous quality improvement documented or implemented by the company. Nevertheless, the company has established various rules and frameworks to ensure that IT investments conducted in accordance with the company's business strategy and objectives. PT. XYZ has implementing risk management and IT resource management. Within the framework, the company has created and formalized an IT related organizational structure, job description of each related stakeholder, supervision and maintenance procedures set forth in the SOP, but no standard (clear) governance standards have been added.

Table 7. Overall Maturity Level

Total Score	**30**
Maturity Level	**30 / 12 = 2,5**

Based on the results of the analysis of each associated domain, the overall value of Maturity Level in PT. XYZ is at level 2 (Repeatable but Intuitive). At

that level, the company has conducted many things that indicate the existence of awareness to act on IT related problems that occur, but the process and SOP not documented properly. In addition, the operationalization and maintenance of IT-related software and hardware is still highly dependent on the expertise and / or implementing vendor. This leads to potential problems faced by the company if the skilled employee is out, and the vendor does not provide the service as before. IT skills upgrading training is still very limited to administrators and IT support teams.

4. CONCLUSION

Maturity Level at PT XYZ shows level 2 (Repeatable but Intuitive) where the company must redefine its IT objectives, in order to have alignment with its main business objectives. Such misalignment caused the undertaken IT project not carefully planned, but only as a support requirement for the operationalization of the company, or in other words IT is not yet an enabler for the company's business. The company still does not have proper planning on procurement or implementation of IT projects, which may impact on the risk of IT project failure and waste of costs. Therefore, it is necessary for the management to improve understanding of the alignment of IT objectives with business objectives, increased understanding and IT related skills for employees who become IT users, and increased attention to investment and maintenance and maintenance software and hardware on a regular basis in order to provide services for a sustainable business enterprise. This study shows that the level of IT maturity in IT service providers is not always show a good level.

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